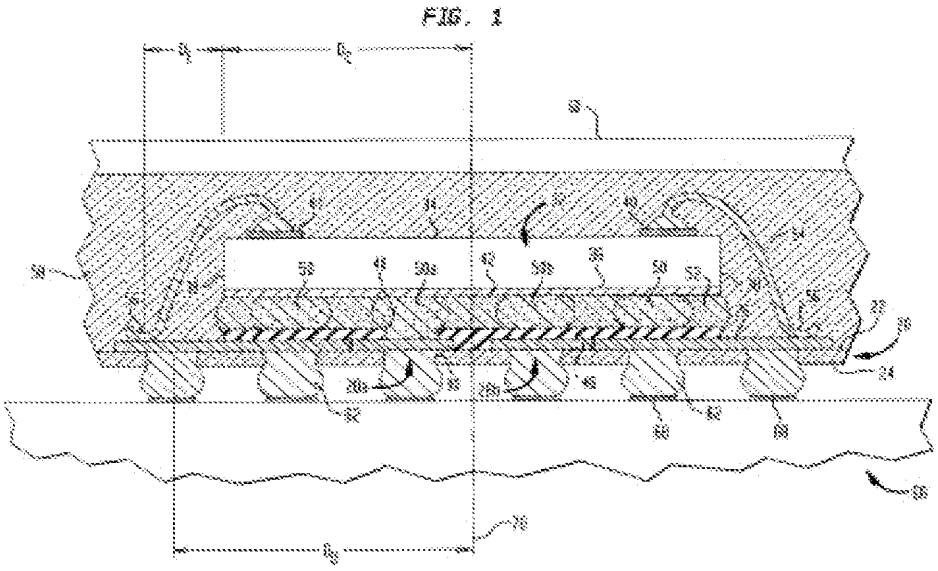
REMARKS

In the final Office Action dated May 29, 2007, the Examiner rejected claims 1-16 and 37-40 under 35 U.S.C. 103 as obvious over the combination of DiStefano (U.S. Patent No. 6,127,724) and Iijima (Japanese Patent Application P2003-030767 - U.S. counterpart Publication No. 2004/0155358). In response, the Applicants have amended claims 1-4, 6, 10, 12, 14, 15, and 38-40 and canceled claims 17-36. Claims 1-16 and 37-40 remain at issue.

THE ART REJECTION

The Examiner has rejected the claims as obvious over the combination of DiStefano and Iijima. The Applicants' strongly disagree. The Examiner has failed to demonstrate a prima facie case of obviousness.

Prior to addressing the merits of the rejection, a review of DiStefano is first provided. For the sake of convenience, Figure 1 of the reference has been inserted below.



The packaging assembly of DiStefano includes a chip 32, having an active top surface 34 and a non-active bottom surface 36. See column 6, lines 52-53. An electrically conductive potential plane 42 is formed on the bottom surface 36 of the chip 32. See column 6, lines 58-60. The package assembly also includes a dielectric element 20 having a top surface 22 and a bottom surface 24. See column 6, lines 36-38. Metal traces 26 and a film 46 are formed on the top

surface 22 of the dielectric element 20. The assembly is then encapsulated in a "lead" encapsulant 58. See column 7, lines 56-65.

The space between the chip 32 and the dielectric element 22 is filled with the encapsulant material 52. Specifically in column 7 lines 51-54, DiStefano states "*A flexible rear encapsulant 52 occupies the space between the rear surface 36 of the chip and the top surface 22 of the dielectric layer,* ***completely filling any voids left unoccupied by the posts, insulating layer 46, and traces 26***." DiStefano therefore explicitly teaches that material 52 is an ***encapsulant*** which is used as a ***filler***.

DiStefano teaches that the encapsulant materials 52 and 58 may be made from a ***gel***, ***elastomer***, or ***soft epoxy***. Specifically, DiStefano states that the encapsulants may be a silicon gel, such as 577 or DC6810, both from Dow Corning, or a thermo-set flexible epoxy encapsulant. See column 8, lines 9-15.

The encapsulant 52 of DiStefano differs from the present invention as claimed in a number of regards:

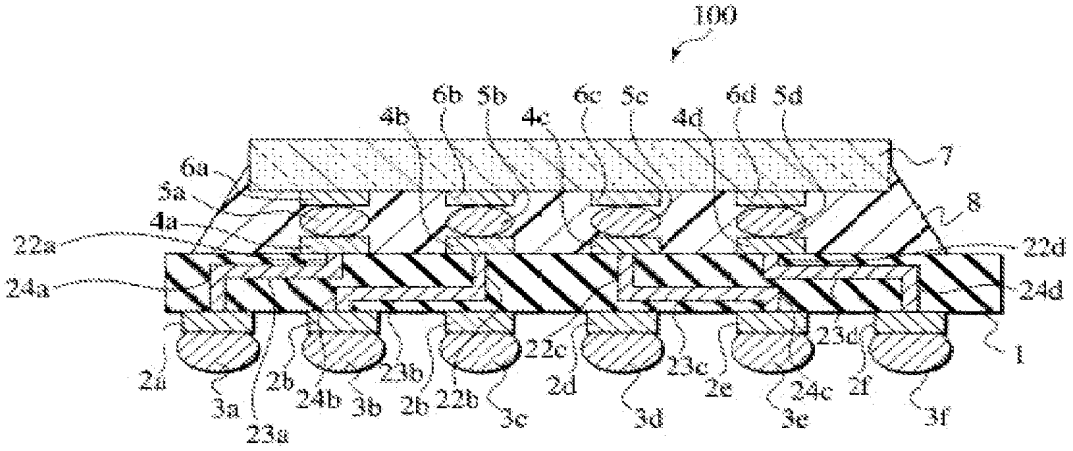
(i) with the present invention, the molding interface material is applied to at least a portion of the **active surface of the die**. In contrast, the encapsulant 52 of DiStefano is provided ***under the bottom or non-active surface of the die***;

(ii) with the present invention, the molding interface material is provided on the active surface of the die to control at least one of tensile and shear stresses experienced by the die **in the proximity of the active surface**. In contrast, since the encapsulant 52 is provided only at the ***bottom non-active surface*** of the die of DiStefano, it has ***no effect*** on controlling the tensile and shear stresses which may be experienced at the active surface of the die; and

(iii) certain claims recite that the moldinginteface material may be either **polyimide** or **BCB**. In contrast, DiStefano teaches that the encapsulant materials 52 and 58 is a ***gel***, ***elastomer***, or ***soft epoxy***.

Figure 1 of Iijima shows a package assembly 100 including a chip 7 mounted onto chip-mount surface 1 by a plurality of solder joints 5a-5d. An underfill resin 8 is provided between chip 7 and the mount surface 1, so as to surround and encapsulate the solder joints 5a-5d. See paragraph [0024].

FIG.1



The claims of the present invention are significantly different than Iijima. The chip 7 of Iijima is a flip chip. With flip chip packages, ***there is no molding cap***. Rather, the chip is flipped and mounted directly onto a substrate using solder balls, ***without*** the use of a molding cap. An underfill resin is then applied between the chip and substrate to protect the solder joints. Since there is no molding cap in Iijima, there are no tensile and/or sheer stresses caused by a molding cap. Consequently, Iijima does ***not*** teach a number of claimed elements, including a **molding cap**, or either a **molding interface material** to control tensile and/or shear stresses experienced at the **active surface** of a die caused by a molding cap

DiStefano or Iijima, either alone or in combination, fail to teach or suggest the use of a **molding interface material** to control at least one of tensile and shear stresses experienced at the **active surface** of a die and substantially caused by a molding cap. Since neither reference teaches the invention as claimed, the proposed combination cannot either.

It is respectfully submitted that all pending claims are allowable and that this case is now in condition for allowance. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below. If any fees are due in connection with the filing of this Amendment, the

Commissioner is authorized to deduct such fees from the undersigned's Deposit Account No. 500388 (Order No. ALTRP100).

Respectfully submitted,
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